

P19529.P01

# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.

P19529

Total Pages

Inventor(s) or Application Identifier  
Kiyonori SEKIGUCHITitle: GATEWAY APPARATUS FOR CONTROLLING  
APPARATUSES ON HOME NETWORK

ADDRESS TO:

Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

## APPLICATION ELEMENTS

## ACCOMPANYING APPLICATION PARTS

1. ☒ Fee Transmittal Form
2. ☒ Specification [Total Pages 23]  
(preferred arrangement set forth below)
  - Descriptive title of the Invention
  - Cross References to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to Microfiche Appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claim(s)
  - Abstract of the Disclosure
3. ☒ Drawing(s) (35 USC 113) [Total Sheets 6]
4. ☒ Oath or Declaration [Total Pages 3]
  - a. ☒ Newly executed (original or copy) ☐ Unexecuted
  - b. ☐ Copy from a prior application (37 CFR 1.63(d))  
(for continuation/divisional with Box 18 completed)  
[Note Box 5 below]
    - i. ☐ **DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR 1.63(d)(2)  
and 1.33(b).
5. ☐ Incorporation By Reference (useable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy  
of the oath or declaration is supplied under Box 4b, is considered  
as being part of the disclosure of the accompanying application  
and is hereby incorporated by reference therein.
6. ☐ Microfiche Computer Program (Appendix)
7. Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)
  - a. ☐ Computer Readable Copy
  - b. ☐ Paper Copy (identical to computer copy)
  - c. ☐ Statement verifying identity of above copies

8. ☒ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney  
(when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure ☐ Copies of IDS Citations  
Statement (IDS)/PTO-1449
12. ☐ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503)  
(Should be specifically itemized)
14. ☐ Small Entity ☐ Statement filed in prior application,  
Statement(s) Status still proper and desired
15. ☐ The prior application is assigned of record to \_\_\_\_\_
16. ☒ Foreign priority claimed
  - a. ☒ Claim of Priority
  - b. ☒ Certified Copy of Priority Document(s)
17. ☐ Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

18. If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information:
☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior Application No. \_\_\_\_\_/\_\_\_\_\_, filed \_\_\_\_\_.
19. ☐ Amend the specification by inserting before the first line the sentence:

This application is a \_\_\_ continuation-in-part, \_\_\_ continuation, \_\_\_ division, of Application No. \_\_\_\_\_/\_\_\_\_\_, filed \_\_\_\_\_.

Address all future correspondence to Customer No. 7055 at the present address of:

**GREENBLUM & BERNSTEIN, P.L.C.**  
 1941 Roland Clarke Place  
 Reston, VA 20191  
 (703) 716-1191

5/25/00

Date

*Leslie J. Bernstein* Reg. No. 33,329  
 Signature

 Bruce H. Bernstein, Reg No. 29,027  
 Typed or Printed Name

# **SPECIFICATION**

Title of the Invention :

**GATEWAY APPARATUS FOR  
CONTROLLING APPARATUSES  
ON HOME NETWORK**

Inventor(s) :

**Kiyonori SEKIGUCHI**

005250-6957560

GATEWAY APPARATUS FOR CONTROLLING  
APPARATUSES ON HOME NETWORK  
BACKGROUND OF THE INVENTION

Field of the Invention

5           The present invention relates to a gateway  
apparatus connected to a home network connected to the  
internet, and more particularly, to a gateway apparatus  
enabling apparatuses on the home network that do not  
directly access to the internet to communicate, such as  
10   a digital camera and hot-water supply system, to be  
controlled through the internet from a remote place.

Description of the Related Art

15           In recent years, with techniques using the internet  
progressing remarkably, the internet has been widely  
spread in not only companies, but also in general homes.  
The internet is mainly used for e-mail, internet shopping,  
internet telephone and Web search in the homes.

20           Further it becomes familiar also to the homes to  
connect a plurality of personal computers and peripheral  
apparatuses as a network to share. This technique is  
achieved by blending and combining, for example,  
provision service of internet provider, technique of  
networks including Ethernet, internet protocol (IP), and  
25   OS of personal computer.

          However, almost of products connected to a home  
network to be controlled do not access to the internet

directly, and therefore do not have IP addresses. Hence it is impossible to transmit data using the internet from a remote place to the products connected to the home network to be controlled such as a digital camera and hot-water supply system. Further since such products require particular data conversion processing (for example, when data is output to a color printer, there is a possibility that conversion of RGB data format into CMY data format is required in some cases), it is difficult also in the view of data format to access to the products connected to the home network to be controlled using the internet.

#### SUMMARY OF THE INVENTION

In view of the foregoing, an object of the present invention is to provide a getaway apparatus enabling accesses to products, connected to a home network to be controlled, from a remote place using the internet. In order to achieve the above object, the gateway apparatus connected to the home network connected to the internet is provided with an IP (Internet Protocol) address management table relating the home products to be controlled to IP addresses respectively assigned to the products to store, and is designed to identify an IP address contained in received data received through the internet, recognize the product to be controlled related to the identified IP address based on the IP address

management table, and transmit the received data to the product to be controlled.

In a first aspect of the present invention, an internet connection type SOHO gateway apparatus, which is connected to the home network connected to the internet, is provided with an IP (Internet Protocol) address management table that relates products to be controlled connected to the home network to IP addresses respectively assigned to the products to store, a section that identifies an IP address from internet data received through the internet, and a control section that recognizes a product to be controlled related to the IP address identified based on the IP address management table, and transmits the internet data to the recognized product to be controlled.

Therefore it is made possible to access to the products to be controlled, which are connected to the home network but do not have assigned IP addresses, from a remote place using the internet.

In a second aspect of the present invention, the section that identifies the IP address in the first aspect is designed to identify an IP address version of IPv4 or IPv6 in Internet Protocols.

Therefore it is made possible to correspond IPv4 to IPv6 as Internet Protocol versions.

In a third aspect of the present invention, the products to be controlled in the first aspect include

produces that do not directly access to the internet to communicate, and the other products that directly access to the internet to communicate.

Therefore it becomes easy to control the products  
5 to be controlled connected to the same home network.

In a fourth aspect of the present invention, the internet connection type SOHO gateway apparatus is provided with an incorrect judgment section that excludes an incorrect use by performing password check  
10 to an access through the internet.

Therefore it is possible to prevent an unintended person from accessing to the product to be controlled connected to the home network.

In a fifth aspect of the present invention, the  
15 internet connection type SOHO gateway apparatus of the first aspect is connected to a personal computer so that the personal computer can register the IP address of the product to be controlled in the IP address management table. Thereby, it is possible to register the IP  
20 address in the IP address management table with ease, and to change and newly register the product to be controlled with ease.

In a sixth aspect of the present invention, the internet connection type SOHO gateway apparatus, which  
25 is connected to the home network connected to the internet, is provided with an IP address management table that relates products to be controlled connected to the home

005250-6357260

network to IP addresses respectively assigned to the products, and data indicative of conversion processing specific to the respective products, a section that identifies an IP address from internet data received through the internet, and a control section that recognizes a product to be controlled related to the IP address identified based on the IP address management table, and transmits the internet data to the recognized product to be controlled based on the conversion processing corresponding to the product to be controlled.

Therefore it is possible to recognize the product to be controlled and data conversion processing specific to the product from the IP address using a single IP address management table, and thereby it is possible to access to the product to be controlled connected to the home network with ease.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects and features of the invention will appear more fully hereinafter from a consideration of the following description taken in connection with the accompanying drawing wherein one example is illustrated by way of example, in which;

FIG.1 is a system construction diagram illustrating a use mode of a gateway apparatus according to one embodiment of the present invention;

FIG.2 is a functional block diagram of the gateway apparatus according to the above embodiment;

FIG.3 is a construction diagram of an IP address management table in the gateway apparatus according to the above embodiment;

FIG.4 is a flow diagram for transmission in the gateway apparatus according to the above embodiment;

FIG.5 is a flow diagram of a first half of a flowchart for reception in the gateway apparatus according to the above embodiment; and

FIG.6 is a flow diagram of a latter half of the flowchart for reception in the gateway apparatus according to the above embodiment.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

One embodiment of the present invention will be described below specifically with reference to accompanying drawings.

FIG.1 is a diagram illustrating a use mode of a gateway apparatus according to the present invention. Home information networks 1a and 1b provided in homes (a) and (n) are constructed to be able to access to the internet 4 through internet service providers 2 and 3 with which each home has a contract, respectively. Home information network 1a is connected to internet service provider 2 by gateway apparatus 2a. Gateway apparatus



2a is connected to Ethernet 3a and a serial bus network conforming to IEEE 1394 (hereinafter referred to as IEEE 1394 network) 4a in parallel. It is assumed that personal computer 5a and the other peripheral apparatuses each with an IP address are connected to Ethernet 3a, and that various peripheral apparatuses 6a that cannot access to the internet directly are connected to IEEE 1394 network 4a. In addition, there is a peripheral apparatus that is connected to Ethernet 3a, but cannot access to the internet directly.

Thus, various information devices present in home (a) such as a personal computer, printer, scanner, television, digital camera, refrigerator, hot-water supply system, electric power meter, and tap water meter are combined as home information network 1a by gateway apparatus 2a, Ethernet 3a and IEEE 1394 network 4a. Home information network 1a contains peripheral apparatuses that cannot communicate through the internet, and gateway apparatus 2a enables such apparatuses to communicate through the internet.

FIG.2 illustrates functional blocks of gateway apparatus 2a. System control section 21, comprised of a CPU, controls the entire operation of gateway apparatus 2a. Communication section 22 performs communications according to the internet protocol through internet service provider 2 connected through a communication line. IP address processing section 23 identifies a type

of the IP address (IPv4 or IPv6) contained in received data, or adds an IP address of a communication partner to datagram of transmission data, to provide to the communication section. IPv4/IPv6 conversion processing section 24 converts IPv6 of the IP address into the IPv4 address when necessary in the case where the type of IP address is IPv6. Memory control section 25 generates a write address and read address of shared memory 26, and performs write control and read control to shared memory 26. Shared memory 26 is used to temporarily store a datagram of data received from internet 4 and a datagram of data to be transmitted. IP address management table 27 manages the IP addresses acquired for all the information devices operating on home information network 1a.

In the present invention, IP addresses are acquired for general information devices each of which does not originally hold an IP address because the device does not access to the internet directly to communicate (hereinafter referred to as non-IP peripheral apparatus) such as a digital camera, scanner and printer.

As illustrated in FIG.3, IP address management table 27 manages node ID 301 on IEEE 1394, unique ID 303, apparatus attribute 304 and application type 305 each related to IP address 302. Node ID 301 is an apparatus number assigned to each terminal on the IEEE 1394 network. On the IEEE 1394 network, the node ID is automatically

assigned at the time of connecting to the network, while being newly assigned according to a predetermined algorithm when a bus reset occurs, and therefore there is a possibility that the node ID varies with time.

5 Unique ID 303 is an identification number specific to an apparatus present on the IEEE 1394 network, and therefore does not vary. Apparatus attribute 304 is indicative of a function attribute of the apparatus present on the IEEE 1394 network. Specifically  
10 information indicative of a product such as a camera, television and printer, and a function such as CCD, digital and color, for example, CCD camera, digital television, scanner or color printer, is set as apparatus attribute 304. Set as application type 305 is a number  
15 of an application for executing conversion processing to adapt to an apparatus at a destination.

Application relation conversion processing section 28 starts an application that refers to IP address management table 27, and executes conversion processing  
20 for adapting an IP address to a non-IP peripheral apparatus when the non-IP peripheral apparatus is designated with the IP address. I/F section 29 operates as an interface with the networks (Ethernet 3a and IEEE 1394 network 4a) connected to gateway apparatus 2a. The  
25 non-IP peripheral apparatus is physically connected to an IEEE 1394 hub on IEEE 1394 network 4a connected to I/F section 29. IP generation section 30 is for use by,

005250-6952550

for example, the personal computer to register the IP address of the non-IP peripheral apparatus therein when data is transmitted to the non-peripheral apparatus. Incorrect judgment section 31 is to exclude an incorrect use by performing password check to an access through the internet.

In addition, home information network 1b in other HOME (n) is constructed in the same way as in home information network 1a as described above with gateway apparatus 2b illustrated in FIG.2 connected to Ethernet 3b and IEEE 1394 network 4b. Specific system constructions of Ethernet 3b and IEEE 1394 networks 4b vary with home.

The case is next explained that communications are performed between home information network 1a and home information network 1b, each constructed as described above, through internet 4. The following explains the case that non-IP peripheral apparatus 6a on IEEE 1394 network 4a in HOME (a) transmits data to non-IP peripheral apparatus 6b on IEEE 1394 network 4b in HOME (n).

FIG.4 is a flowchart for use in transmitting data from non-IP peripheral apparatus 6a in HOME (a) to internet service provider 2. The first step is to determine a non-IP peripheral apparatus that transmits data to a communication partner through the internet (ST41). For example, assume the case that an image captured with a scanner (non-IP peripheral apparatus 6a)

in HOME (a) is printed in a color printer (non-IP peripheral apparatus 6b) in HOME (n) through the internet. In this case, the scanner is determined as non-IP peripheral apparatus 6a at a transmission side.

5       The next step is to set an IP address of non-IP peripheral apparatus 6b at the communication partner (ST42). When non-IP peripheral 6a is determined as the transmission side, personal computer 5a sets the IP address of non-IP peripheral apparatus 6b at the  
10       communication partner in IP generation section 30. It is because non-IP peripheral apparatus 6a cannot execute processing based on the internet protocol.

Non-IP peripheral apparatus 6a starts operating to generate transmission data (ST43). In the case of this  
15       embodiment, the scanner captures an image of an original. The image data output from the scanner that captures the data is transferred to gateway apparatus 2a.

Gateway apparatus 2a stores the image data in shared memory 26 through a data bus in the apparatus from I/F  
20       section 29 (ST44). Memory control section 25 performs the control to write the image data in shared memory 26.

System control section 21 controls communication section 22 so that the section 22 starts TCP (Transfer Control Protocol), and capsulizes the image data stored  
25       in shared memory 26 in TCP packets to provide to IP address processing section 23 as a lower layer. IP address processing section 23 acquires an address of the

communication partner from IP generation section 30, and provides TCP/IP datagram to communication section 22. Communication section 22 generates an internet frame with the TCP/IP datagram as the contents to transmit to internet service provider 2 (ST45).

Since getaway apparatus 2a thus intervenes to transmit the image data captured with the scanner as non-IP peripheral apparatus 6a to internet service provider 2, the scanner as non-IP peripheral apparatus 6a can transmit the image data over internet 4 without considering the internet protocol at all.

Internet service provider 2 temporarily stores the data received from gateway apparatus 2a (ST46). The data is transferred to internet 4 based on the IP address of the communication partner from provider 2 (ST47), and then transferred to internet service provider 3 with which HOME (n), as a reception side, has a contract (ST48).

FIGs.5 and 6 illustrate flowcharts for gateway apparatus 2b in HOME (n) as the reception side to provide the data received from internet service provider 3 to non-IP peripheral apparatus 6b, and complete the processing.

In gateway apparatus 2b in HOME (n) as the reception side, communication section 22 operates to access to internet service provider 3, and receives the data addressed to HOME (n) (ST51 and ST52). Specifically the

section 22 receives as the data addressed to HOME (n) data that has as a destination address an IP address matching the IP address registered in IP address management table 27 contained in gateway apparatus 2b.

5 IP address processing section 23 checks the IP address of the received data received by communication section 22 to identify the type of the IP address (ST53). Specifically the section 23 identifies whether the IP address is IPv4 or IPv6.

10 When it is judged at ST53 that the IPv6 address designates an IPv4 peripheral apparatus, the IPv6 address is returned to an IPv4 address by the IP tunneling technique (ST56 and ST57). It is assumed that the IP address conversion algorithm conforms to RFC standard  
15 of IETF.

Next, system control section 21 specifies an information apparatus that holds the IP address matching the IP address of the received data by referring to IP address management table 27 (ST58, ST59 and ST60). For  
20 example, when the IP address is 133.185.245.9, the section 21 recognizes that the destination is a printer on the IEEE 1394 network by referring to IP address 302 and the contents of IP address management table 27.

System control section 21 judges the apparatus  
25 attribute and application type of the information apparatus specified by the IP address using IP address management table 27 (ST61). Further when the

005250-6952560

destination is an information apparatus on the IEEE 1394 network, the section 21 acquires the node ID at the same time.

There is a possibility that some received data cannot be processed when transferred to the information apparatus as the destination with no processing provided thereon. Herein, the datagram stored in shared memory 26 is scanner data transmitted through internet 4, and cannot be directly output to a printer. Accordingly it is necessary to convert the data transmitted from the transmission side into data that an apparatus at the reception side can process. In this embodiment, the gateway apparatus is provided with applications for each information apparatus that convert the received data into data that the respective information apparatus can interpret, and the application numbers are set in IP address management table 27.

Application relation conversion processing section 28 acquires the application number from IP address management table 27, and starts the conversion program with the application number to execute the conversion processing. Thereby, RGB data of the scanner is converted into color space with YMCK. The data converted with the conversion program is stored in shared memory 26 (ST63).

Next, in an example of this embodiment, a printer driver is started to convert the stored data into printer



data (ST64). To transmit the converted data stored in shared memory 26, a frame conforming to IEEE 1394 is generated using the node ID acquired at step ST 61 as the destination (ST65). Then the data is transferred to the printer on IEEE 1394 network 4b (ST66).

In addition, on the IEEE 1394 network, the node ID is automatically re-assigned when a plug and play function of the IEEE 1394 operates, and the re-assigned node ID is different from the previous one. However, in this case, the communication partner as the destination is recognized successively by referring to the unique ID in IP address management table 27.

Thus, according to this embodiment, node ID 301, apparatus attribute 304, and application type 305 are managed based on the IP address of the non-IP peripheral apparatus in IP address management table 27. Therefore it is possible to obtain service provision such as information retrieval, information collection and e-mail through the internet from the non-IP peripheral apparatus that is not able to connect to the internet directly conventionally. It is further possible to transfer data between different home electric appliances using respective applications on respective home networks connected through internet 4.

As can be apparent from the above explanation, according to the present invention, the gateway apparatus connected to the home network connected to the

internet is provided with the IP address management table relating the home products to be controlled to IP (Internet Protocol) addresses respectively assigned to the products, identifies an IP address contained in internet data received through the internet, recognizes the product to be controlled related to the identified IP address based on the IP address management table, and transmits the internet data to the product to be controlled. Therefore it is possible to access to the product to be controlled, connected to the home network, to which an IP address is not assigned, from a remote place using the internet.

In addition, while the above explanation describes the home network, the present invention is not limited to a network inside the home, and is applicable to the network inside an office similarly. The present invention is also applicable similarly to the case where the gateway apparatus accesses to the internet without using service provider 2, and communicates with an apparatus on the other network.

The present invention is not limited to the above described embodiments, and various variations and modifications may be possible without departing from the scope of the present invention.

This application is based on the Japanese Patent Application No.HEI11-156064 filed on June 3, 1999, entire content of which is expressly incorporated by

[illegible]

What is claimed is:

1. A gateway apparatus capable of connecting to the internet, said apparatus being one of components constructing a home network, said apparatus comprising:

5 an IP address table that relates a plurality of apparatuses, each of which is one of the components constructing the home network, to IP addresses respectively assigned to the apparatuses to store;

10 a reception section that is configured to receive data with a destination indicative of one of the apparatuses constructing the home network;

15 a recognition section that is configured to recognize the apparatus with an IP address matching the IP address indicative of the destination contained in received data using the IP address table; and

a distribution section that is configured to transmit the received data to a recognized apparatus.

2. The gateway apparatus according to claim 1, further comprising:

20 a conversion section that is configured to execute processing for converting a type of the IP address indicative of the destination contained in the received data into a type of an IP address registered in the IP address table when the type of the IP address indicative of the destination is different from the type of the IP  
25 address registered in the IP address table.

3. The gateway apparatus according to claim 2, wherein

the type of the IP address indicative of the destination is IPv6, and the type of the IP address registered in the IP address table is IPv4.

4. The gateway apparatus according to claim 1, wherein  
5 the apparatuses constructing the home network include an apparatus that has a function of directly accessing to the internet to communicate, and an apparatus that does not have the function of directly accessing to the internet to communicate.

10 5. The gateway apparatus according to claim 4, wherein the apparatus that does not have the function of directly accessing to the internet to communicate includes at least one selected from the group consisting of a printer, a scanner, a television, a digital camera, a refrigerator,  
15 a hot-water supply, an electric power meter, and a tap water mater .

6. The gateway apparatus according to claim 1, further comprising:

a security system that is configured to exclude an  
20 incorrect use by performing password check to an access through the internet.

7. The gateway apparatus according claim 1, wherein a computer directly or indirectly connected to said gateway apparatus writes IP addresses of the apparatuses  
25 in the IP address table.

8. The gateway apparatus according to claim 1, further comprising:

converters, provided for each apparatus on the home network, each of which is configured to convert the received data into data that the apparatus as the destination of the received data is capable of processing;

wherein the IP address table further has pieces of application information related to the respective IP addresses of the apparatuses, and when the received data is data that the recognized apparatus is not capable of processing, the distribution section specifies a converter using the application information registered in the IP address table, requests the converter to convert the received data, and transfers the received data that is converted by the converter to the apparatus as the destination.

9. A gateway apparatus capable of connecting to the internet, said apparatus being one of components constructing a home network, said apparatus comprising:

a recognition section that is configured to recognize a non-IP apparatus as an originator issuing transmission data from among apparatuses on the home network, and a destination indicative of a reception terminal to receive the transmission data, by an instruction from another apparatus on the home network;

a reception section that is configured to receive the transmission data through the home network from the non-IP apparatus as the originator after the apparatus

as the originator and the destination indicative of the reception terminal are recognized; and

a communication section that is configured to convert received transmission data into an internet frame to transmit to the destination indicative of the reception terminal.

10. A method for distributing data transmitted through the internet to a reception terminal on a home network, comprising:

10 receiving the data with a destination indicative of one apparatus of apparatuses constructing the home network;

recognizing the apparatus with an IP address matching the IP address indicative of the destination contained in received data using an IP address table, the IP address table relating a plurality of apparatuses, each of which is one of components constructing the home network, to IP addresses respectively assigned to the apparatuses to store; and

20 transmitting the received data to a recognized apparatus.

11. A method for transmitting data from an apparatus on a home network through the internet to a reception terminal to receive the data, comprising:

25 recognizing a non-IP apparatus as an originator issuing transmission data from among apparatuses on the home network, and a destination indicative of a reception

00550" 6954560

terminal to receive the transmission data, by an instruction from an IP apparatus on the home network; the non-IP apparatus not having a function of directly accessing to the internet to communicate, and the IP  
5 apparatus having the function of directly accessing to the internet to communicate;

receiving the transmission data through the home network from the non-IP apparatus as the originator after the apparatus as the originator and the destination  
10 indicative of the reception terminal are recognized; and

converting received transmission data into an internet frame to transmit to the destination indicative of the reception terminal.



## ABSTRACT OF THE DISCLOSURE

The gateway apparatus has an IP address table that relates a plurality of apparatuses, each of which is one of components constructing a home network, to IP addresses respectively assigned to the apparatuses to store, a reception section that receives data with a destination indicative of one of the apparatuses constructing the home network, a recognition section that recognizes the apparatus with an IP address matching the IP address indicative of the destination contained in received data using the IP address table, and a distribution section that transmits the received data to the recognized apparatus.

005250 69374500

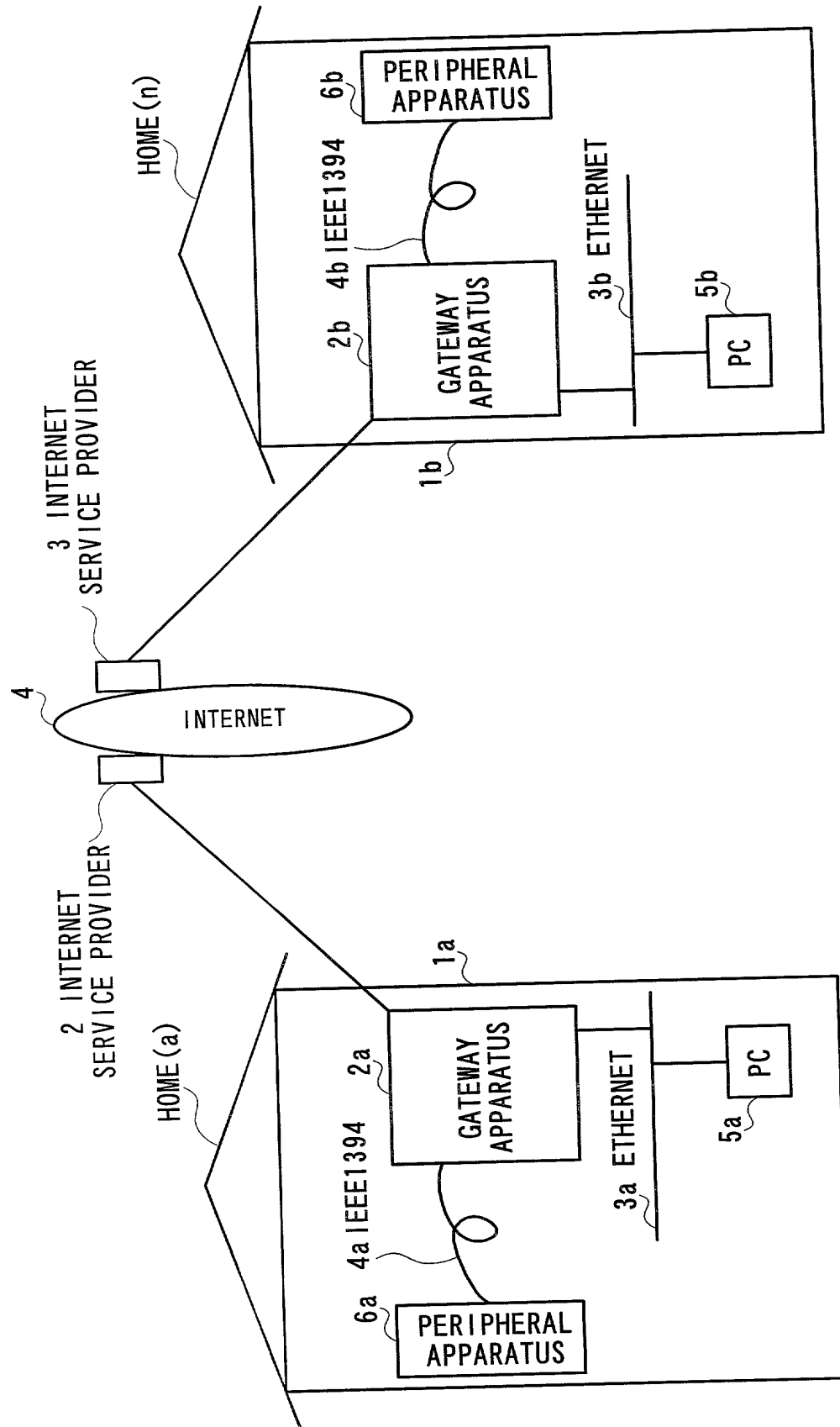


FIG. 1

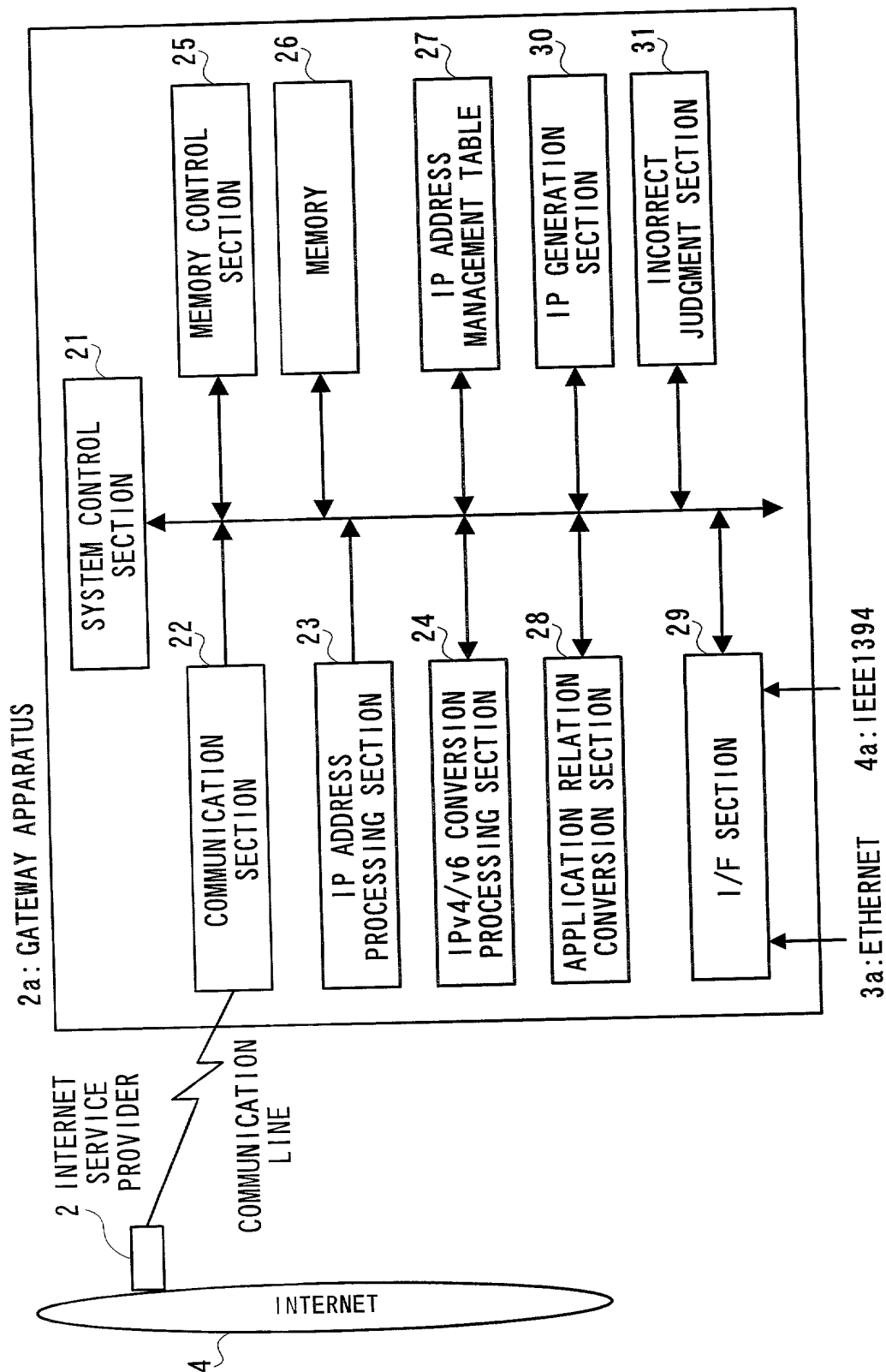


FIG. 2

IEEE1394 Node ID	IPv4/v6 IP ADDRESS	UID (UNIQUE ID)	APPARATUS ATTRIBUTE (PROPERTY)	APPLICATION TYPE
#1	133.185.245.7	123456	CCD CAMERA	CAMERA AP
#2	133.185.245.8	123457	DIGITAL TV	TV AP
#3	133.185.245.9	123458	COLOR PRINTER	PRINTER DRIVER
#4	133.185.245.A	123569	SCANNER	SCANNER AP
#5	133.185.245.C	12345A	REFRIGERATOR	REFRIGERATOR AP
#63	1080::8:800:200C:417A	12346B	PERSONAL COMPUTER	NONE

FIG. 3

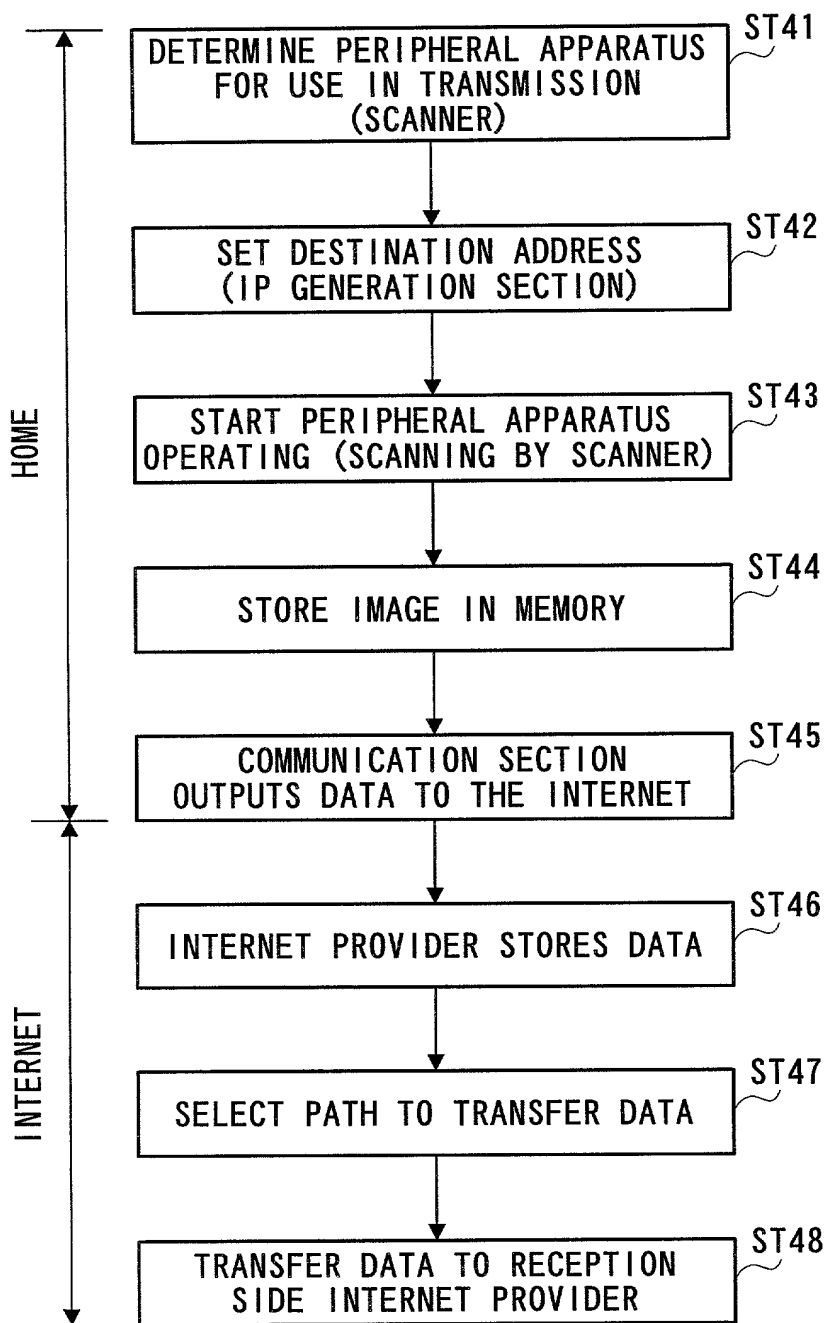
[illegible]

FIG. 4

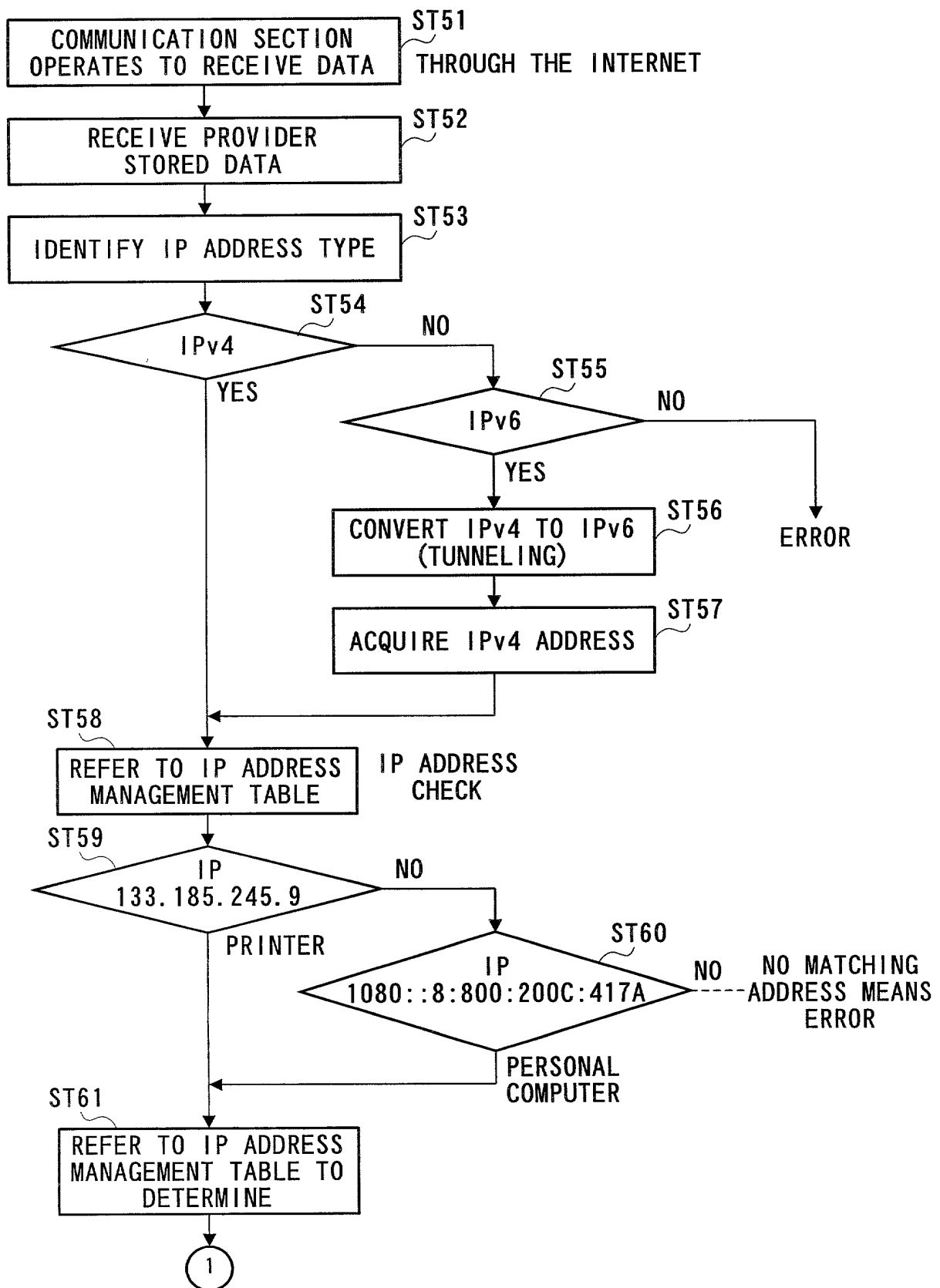


FIG. 5

005250" 6952/6550

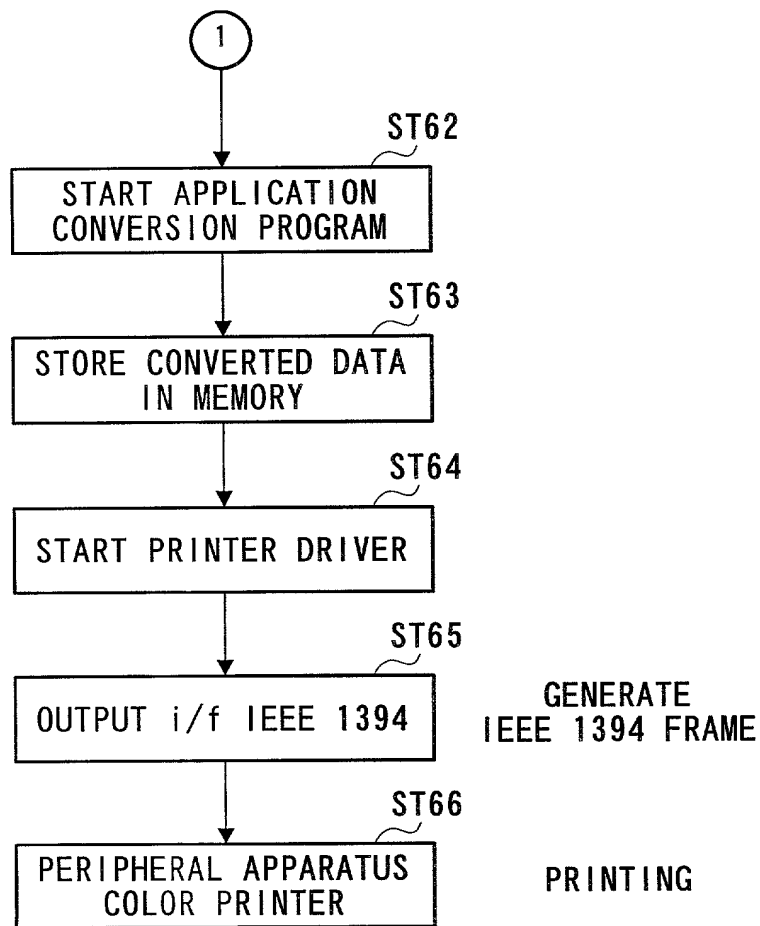


FIG. 6

# Declaration and Power of Attorney For Utility or Design Patent Application

## 特許出願宣言書

### Japanese Language Declaration

私は、下欄に氏名を記載した発明者として、以下のとおり宣言する:

私の住所、郵便の宛先および国籍は、下欄に氏名に続いて記載したとおりであり、

名称の発明に関し、請求の範囲に記載した特許を求める主題の本来の、最初にして唯一の発明者である(一人の氏名のみが下欄に記載されている場合)か、もしくは本来の、最初にして共同の発明者である(複数の氏名が下欄に記載されている場合)と信じ、

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

上記発明の明細書(下記の欄でX印がついていない場合は、本書に添付)は、

☐ 年 月 日に提出され、  
米国出願番号 \_\_\_\_\_ とし、  
(該当する場合) 年 月 日に訂正されました。又は、  
特許協定条約国際出願番号 \_\_\_\_\_ とし、  
(該当する場合) 年 月 日に訂正されました。

私は、前期のとおり補正した請求の範囲を含む前記明細書の内容を検討し、理解したことを陳述する。

私は、連邦規則法典第37編第1条第56項定義されるとおり、特許資格の有無について重要な情報を開示すべき義務をあることを認めます。

私は合衆国法典第35部第119条(a-d)項又は第365条(b)項に基づく、下記の外国特許出願又は発明者証出願、或いは第365条(a)項に基づく、少なくとも米国以外の1ヶ国を指名したPCT国際出願の外国優先権を主張し、更に優先権の主張に係わる基礎出願の出願日前の出願日を有する外国特許出願、又は発明者証出願或いはPCT国際出願を以下に"なし"の箱に印をつけることにより明記する:

#### Prior foreign applications

先の外国出願

JP 11-156064	JAPAN	03/June/1999
(Number)	(Country)	(Day/Month/Year Filed)
(番号)	(国名)	(出願の年月日)
_____	_____	_____
(Number)	(Country)	(Day/Month/Year Filed)
(番号)	(国名)	(出願の年月日)
_____	_____	_____
(Number)	(Country)	(Day/Month/Year Filed)
(番号)	(国名)	(出願の年月日)

☐ その他の外国特許出願番号は別紙の追補優先権欄にて記載する。

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

GATEWAY APPARATUS FOR

CONTROLLING APPARATUSES

ON HOME NETWORK

the specification of which is attached hereto unless the following box is checked:

☐ was filed on \_\_\_\_\_ as  
United States Application Number \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable) or,  
PCT International Application Number \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority under Title 35, United States Code §119(a-d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States, listed below. I have also identified below, by checking the "No" box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

#### Priority claimed 優先権の主張

<input checked="" type="checkbox"/>	<input type="checkbox"/>
Yes	No
あり	なし
<input type="checkbox"/>	<input type="checkbox"/>
Yes	No
あり	なし
<input type="checkbox"/>	<input type="checkbox"/>
Yes	No
あり	なし

☐ Additional foreign application numbers are listed on a supplemental priority sheet attached hereto.



# Japanese Language Utility or Design Patent Application Declaration

私は、合衆国法典第35部第119条(e)項に基づく、下記の合衆国仮特許出願の利益を主張する。

I hereby claim the benefit under Title 35, United States Code §119(e) of any United States provisional application(s) listed below.

(Application Number)  
(番号)

(Day/Month/Year Filed)  
出願の年月日

(Application Number)  
(番号)

(Day/Month/Year Filed)  
出願の年月日

(Application Number)  
(番号)

(Day/Month/Year Filed)  
出願の年月日

☐ その他の合衆国仮特許出願番号は別紙の追補優先権欄にて記載する。

☐ Additional provisional application numbers are listed on a supplemental priority sheet attached hereto.

私は、合衆国法典第35部第120条に基づく下記の合衆国特許出願、又は第365条(c)項に基づく合衆国を指名したPCT国際出願の利益を主張し、本願の請求の範囲各項に記載の主題が合衆国法典第35部第112条第1項規定の態様で、先の合衆国特許出願又はPCT国際出願に開示されていない限度において、先の出願の出願日と本願の国内出願日又はPCT国際出願日の間に有効となった連邦規則法典第37部第1章第56条に記載の特許要件に所要の情報を開示すべき義務を有することを認める。

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s), or §365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Application No.)  
(出願番号)

(Day/Month/Year Filed)  
(出願の年月日)

(現況)  
(特許済み、係属中、放棄済み)

(Status)  
(patented, pending, abandoned)

(Application No.)  
(出願番号)

(Day/Month/Year Filed)  
(出願の年月日)

(現況)  
(特許済み、係属中、放棄済み)

(Status)  
(patented, pending, abandoned)

☐ その他の合衆国又は国際特許出願番号は別紙の追補優先権欄にて記載する。

☐ Additional U. S. or international application numbers are listed on a supplemental priority sheet attached hereto.

私は、ここに自己の知識のもとで行った陳述がすべて真実であり、自己の有する情報および信ずるところに従って行った陳述が真実であると信じ、さらに故意に虚偽の陳述等を行った場合、合衆国法典第18部第1001条により、罰金もしくは禁錮に処せられるか、またはこれらの刑が併科され、またかかる故意による虚偽による陳述が本願ないし本願に対して付与される特許の有効性を損なうことがあることを認識して、以下の陳述を行ったことを宣言する。

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

私、下記署名者は、ここに記載の米国弁護士または代理人に本出願に関し特許商標庁にて取られるいかなる行為に関して、同米国弁護士又は代理人が、私に直接連絡なしに私の外国弁護士或いは法人代表者からの指示を受け取り、それに従うようここに委任する。この指示を出す者が変更の場合には、ここに記載の米国弁護士又は代理人にその旨通知される。

The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from either his foreign patent agent or corporate representative, if any, as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from whom instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

## Japanese Language Utility or Design Patent Application Declaration

委任状: 私は、下記発明者として、下記に明記された顧客番号を伴う以下の弁護士又は、代理人をここに選任し、本願の手続きを遂行すること並びにこれに関する一切の行為を特許商標庁に対して行うことを委任する。そして全ての通信はこの顧客番号宛に発送される。

顧客番号 7055

現在選任された弁護士は下記の通りである。

Neil F. Greenblum  
Bruce H. Bernstein  
James L. Rowland  
Arnold Turk

POWER OF ATTORNEY: As a named inventor, I hereby appoint the attorney(s) and/or agent(s) associated with the Customer Number provided below to prosecute this application and transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to that Customer Number:

**CUSTOMER NUMBER 7055**

The appointed attorneys presently include:

Reg. No. 28,394  
Reg. No. 29,027  
Reg. No. 32,674  
Reg. No. 33,094

Address: **GREENBLUM & BERNSTEIN, P.L.C.**  
1941 ROLAND CLARKE PLACE  
RESTON, VA 20191

直接電話連絡先 : (名称および電話番号)

Direct Telephone Calls to: (name and telephone number)

**GREENBLUM & BERNSTEIN, P.L.C.**  
(703)716-1191

唯一のまたは第一の発明者の氏名	Full name of sole or first inventor Kiyonori SEKIGUCHI
同発明者の署名 日付	Inventor's signature Date <i>K. Sekiguchi</i> <i>May 2, 2000</i>
住所	Residence Machida-shi, Tokyo Japan
国籍	Citizenship Japan
郵便の宛先	Post Office Address 2-9-29, Minamitsukushino, Machida-shi, Tokyo 194-0002 Japan
第二の共同発明者の氏名(該当する場合)	Full name of second joint inventor, if any
同第二共同発明者の署名 日付	Second Inventor's signature Date
住所	Residence
国籍	Citizenship Japan
郵便の宛先	Post Office Address

(第三またはそれ以降の共同発明者に対しても同様な情報および署名を提供すること。)

(Supply similar information and signature for third and subsequent joint inventors.)